

ATINGIMUS RADAR



PEOPLE COUNTING RADAR - PEC-20



GENERAL DESCRIPTION

The Radar System PEC20 is able to count persons by creating an invisible Radar boundary. It can distinguish arriving people from people leaving (20° installation).

Two different open collector outputs (one for incoming people and one for outgoing people) indicate a detected person via a pulse.

The system works in the 24,000...24,250GHz band.

TECHNICAL DATA

General technical data

- Supply voltage: 9 ... 26 V
- Supply current: 120mA (typ.)

Open Collector

- Switched On: <0,5V diff.-voltage to +power supply at 40mA
- High Impedance: <5 μ A at 0V
- Transmit Frequency: 24.000...24.250GHz
- Transmit Power: 20dBm (EIRP) max.
- Sensitivity: \geq person / children size
- Pulse Length: 20ms
- Minimum Pause between 2 pulses: 20ms

It is not necessary for persons to keep a safety distance from the running radar because in any consideration the limits of electrical fields in the EU recommendation 1999/519/EG are not exceeded.

Mounting possibility:

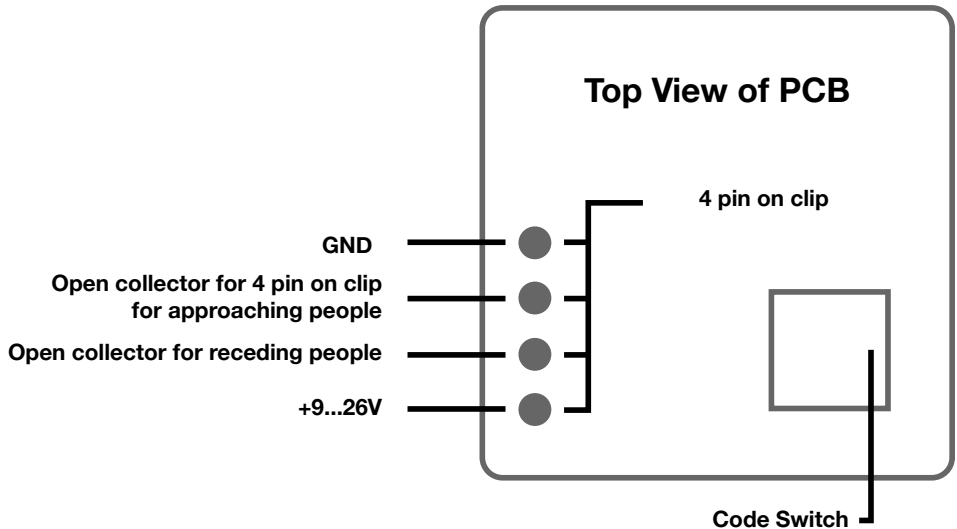
- Material Bottom: ALg, black anodized
- Material Cover: POM-Plastic black colored
- Dimensions (lxwxh): 100 x 100 x 42 (mm)
- Mounting possibility: 4x M4 holes at the back side
- Mounting possibilities: 82 x 82 mm in square

Environmental Specifications

- Housing and connectors: Rated IP67, waterproof and vibration proof
- Operating temperature: -20° to +60°
- Storage temperature: -30° to +80°C

FUNCTIONAL DESCRIPTION

After switching the system on, both open collectors are in an undefined status for about 1sec. Afterwards they are in high impedance mode (if there is no person).



To get an optimal counting result the following rules should be fulfilled.
(see next page)

APPLICATION

The Radar System PEC20 should be mounted in a Radar plastic case with 6mm distance between case and antenna. The Radar can be installed at the ceiling or at the wall beside the walking people. The best result can be reached by installing the Radar at the ceiling. The installation height should be:

20°-INSTALLATION

height	code switch position	width of walkway to be reached by the Radar
2,0 m	0	1,2 m (min.)
2,2 m	1	1,4 m (min.)
2,4 m	2	1,6 m (min.)
2,6 m	3	1,8 m (min.)
2,8 m	4	2,0 m (min.)
3,0 m	5	2,2 m (min.)
3,2 m	6	2,4 m (min.)
3,4 m	7	2,6 m (min.)
3,6 m	8	2,8 m (min.)
3,8 m	9	3,0 m (min.)
4,0 m	A	3,2 m (min.)
4,2 m	B	3,4 m (min.)
4,4 m	C	3,6 m (min.)
4,6 m	D	3,8 m (min.)
4,8 m	E	4,0 m (min.)
5,0 m	F	4,2 m (min.)

APPLICATION

The Radar should be installed in a 20° angle from the vertical line, that means it should be adjusted 70 degrees from the horizontal area down to the people.

The 2 patch lines of the antenna shall be in a vertical direction (green clip is beside the Radar). Then the antenna characteristic is 11 degrees in vertical direction and 70 degrees in horizontal direction.

Therefore a great width of walkway can be observed by the Radar. Each detected person is indicated via a pulse, that means a switched on open collector with 20ms length.

People can walk with at least 0,2m/s speed and at maximum 4m/s to be detected. Two people walking slowly (1m/s) behind each other can be detected if the distance is greater than 0,8m. 2 people walking fast (4m/s) behind each other can be detected if the distance is greater than 2m.

Two People, one coming and one receding can be detected simultaneously.

USER GUIDE

The user's guide consists of the following chapters:

- Absolute maximum value on the interfaces
- List of the interfaces
- General technical data
- Functional description

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